

Table. Luxembourg: Public Sector Debt Sustainability Framework, 1998-2008  
(In percent of GDP, unless otherwise indicated)

|                                                                                                                      | Actual |      |      |      |       |      |      |       |      |      | Projections                                   |      |                            |       |                   |       | Debt-stabilizing primary balance 10/ |      |     |
|----------------------------------------------------------------------------------------------------------------------|--------|------|------|------|-------|------|------|-------|------|------|-----------------------------------------------|------|----------------------------|-------|-------------------|-------|--------------------------------------|------|-----|
|                                                                                                                      | 1993   | 1994 | 1995 | 1996 | 1997  | 1998 | 1999 | 2000  | 2001 | 2002 | 2003                                          | 2004 | 2005                       | 2006  | 2007              | 2008  |                                      |      |     |
|                                                                                                                      |        |      |      |      |       |      |      |       |      |      | <b>I. Baseline Projections</b>                |      |                            |       |                   |       |                                      |      |     |
| <b>1 Public sector debt 1/</b>                                                                                       | 7.2    | 6.5  | 6.6  | 7.2  | 6.8   | 6.2  | 5.8  | 5.5   | 5.5  | 5.7  | 4.9                                           | 6.1  | 5.9                        | 5.8   | 3.8               | 3.2   |                                      |      |     |
| o/w foreign-currency denominated                                                                                     | ...    | ...  | ...  | ...  | ...   | ...  | ...  | ...   | ...  | ...  | 0.2                                           | 0.0  | 0.0                        | 0.0   | 0.0               | 0.0   | -0.1                                 |      |     |
| 2 Change in public sector debt                                                                                       | 1.6    | -0.7 | 0.1  | 0.5  | -0.4  | -0.5 | -0.4 | -0.4  | 0.0  | 0.2  | -0.8                                          | 1.1  | -0.2                       | -0.1  | -2.0              | -0.6  |                                      |      |     |
| 3 Identified debt-creating flows (4+7+12)                                                                            | -2.0   | -3.5 | -2.6 | -2.2 | -3.9  | -3.8 | -4.1 | -7.0  | -6.3 | -2.6 | 0.8                                           | 2.4  | 2.8                        | 2.6   | 1.5               | 0.8   |                                      |      |     |
| 4 Primary deficit                                                                                                    | -2.0   | -3.2 | -2.4 | -2.3 | -3.6  | -3.5 | -3.8 | -6.6  | -6.4 | -2.7 | 0.8                                           | 2.4  | 2.8                        | 2.6   | 1.6               | 0.9   |                                      |      |     |
| 5 Revenue and grants                                                                                                 | 50.0   | 49.2 | 47.6 | 47.5 | 46.5  | 45.1 | 44.8 | 44.9  | 45.3 | 46.7 | 46.4                                          | 45.2 | 45.0                       | 45.0  | 45.0              | 45.0  |                                      |      |     |
| 6 Primary (noninterest) expenditure                                                                                  | 48.0   | 45.9 | 45.2 | 45.2 | 43.0  | 41.6 | 40.9 | 38.2  | 38.9 | 44.0 | 47.2                                          | 47.6 | 47.9                       | 47.6  | 46.6              | 45.9  |                                      |      |     |
| 7 Automatic debt dynamics 2/                                                                                         | 0.0    | -0.2 | -0.2 | 0.0  | -0.3  | -0.2 | -0.3 | -0.4  | 0.1  | 0.1  | 0.1                                           | 0.1  | 0.0                        | 0.0   | -0.1              | -0.1  |                                      |      |     |
| 8 Contribution from interest rate/growth differential 3/                                                             | -0.1   | -0.2 | -0.1 | 0.0  | -0.4  | -0.2 | -0.3 | -0.4  | 0.1  | 0.2  | 0.1                                           | 0.1  | 0.0                        | 0.0   | -0.1              | -0.1  |                                      |      |     |
| 9 Of which contribution from real interest rate                                                                      | 0.36   | 0.0  | 0.1  | 0.2  | 0.2   | 0.2  | 0.2  | 0.0   | 0.2  | 0.2  | 0.2                                           | 0.2  | 0.2                        | 0.2   | 0.1               | 0.1   |                                      |      |     |
| 10 Of which contribution from real GDP growth                                                                        | -0.45  | -0.3 | -0.2 | -0.2 | -0.5  | -0.4 | -0.4 | -0.5  | -0.1 | -0.1 | -0.1                                          | -0.1 | -0.2                       | -0.2  | -0.2              | -0.1  |                                      |      |     |
| 11 Contribution from exchange rate depreciation 4/                                                                   | 0.0    | 0.0  | 0.0  | 0.0  | 0.0   | 0.0  | 0.0  | 0.0   | 0.0  | 0.0  | 0.0                                           | 0.0  | 0.0                        | 0.0   | 0.0               | 0.0   |                                      |      |     |
| 12 Other identified debt-creating flows                                                                              | 0.0    | 0.0  | 0.0  | 0.0  | 0.0   | 0.0  | 0.0  | 0.0   | 0.0  | 0.0  | 0.0                                           | 0.0  | 0.0                        | 0.0   | 0.0               | 0.0   |                                      |      |     |
| 16 Residual, including asset changes (2-3)                                                                           | 3.6    | 2.7  | 2.7  | 2.8  | 3.5   | 3.2  | 3.7  | 6.7   | 6.4  | 2.7  | -1.6                                          | -1.3 | -3.0                       | -2.6  | -3.5              | -1.4  |                                      |      |     |
| Public sector debt-to-revenue ratio 1/                                                                               | 14.5   | 13.2 | 13.9 | 15.1 | 14.5  | 13.8 | 13.0 | 12.2  | 12.1 | 12.2 | 10.6                                          | 13.4 | 13.0                       | 12.9  | 8.4               | 7.1   |                                      |      |     |
|                                                                                                                      |        |      |      |      |       |      |      |       |      |      | 10-Year Historical Average                    |      | 10-Year Standard Deviation |       | Projected Average |       |                                      |      |     |
| <b>Key Macroeconomic and Fiscal Assumptions</b>                                                                      |        |      |      |      |       |      |      |       |      |      |                                               |      |                            |       |                   |       |                                      |      |     |
| Real GDP growth (in percent)                                                                                         | 8.5    | 4.1  | 3.5  | 3.3  | 8.3   | 6.9  | 7.8  | 9.1   | 1.2  | 1.3  | 5.4                                           | 3.1  | 1.2                        | 2.3   | 3.3               | 3.5   | 3.9                                  | 4.0  | 3.0 |
| Average nominal interest rate on public debt (in percent) 6/                                                         | 6.7    | 5.7  | 5.9  | 5.6  | 5.3   | 5.9  | 5.4  | 5.1   | 5.1  | 4.7  | 5.5                                           | 0.5  | 4.0                        | 5.7   | 4.5               | 4.6   | 3.1                                  | 4.0  | 4.3 |
| Average real interest rate (nominal rate minus change in GDP deflator, in percent)                                   | 6.9    | 0.9  | 1.5  | 3.6  | 2.6   | 3.2  | 3.2  | 1.2   | 3.0  | 4.1  | 3.0                                           | 1.7  | 2.9                        | 4.0   | 2.8               | 3.0   | 1.3                                  | 2.2  | 2.7 |
| Nominal appreciation (increase in US dollar value of local currency, in percent)                                     | -9.6   | 1.4  | 10.1 | -3.0 | -10.6 | -1.2 | -4.9 | -13.5 | -2.9 | 5.2  | -2.9                                          | 7.3  | 19.9                       | 6.3   | 0.0               | 0.0   | 0.0                                  | 0.0  | 4.4 |
| Inflation rate (GDP deflator, in percent)                                                                            | -0.2   | 4.9  | 4.3  | 2.0  | 2.7   | 2.7  | 2.2  | 3.9   | 2.2  | 0.6  | 2.5                                           | 1.6  | 1.1                        | 1.7   | 1.7               | 1.7   | 1.7                                  | 1.8  | 1.6 |
| Growth of real primary spending (deflated by GDP deflator, in percent)                                               | 10.1   | -0.3 | 1.8  | 3.4  | 3.0   | 3.5  | 6.1  | 1.9   | 2.9  | 14.7 | 4.7                                           | 4.5  | 8.6                        | 3.1   | 4.0               | 2.9   | 1.8                                  | 2.3  | 3.8 |
| Primary deficit                                                                                                      | -2.0   | -3.2 | -2.4 | -2.3 | -3.6  | -3.5 | -3.8 | -6.6  | -6.4 | -2.7 | -3.7                                          | 1.6  | 0.8                        | 2.4   | 2.8               | 2.6   | 1.6                                  | 0.9  | 1.8 |
|                                                                                                                      |        |      |      |      |       |      |      |       |      |      | <b>II. Stress Tests for Public Debt Ratio</b> |      |                            |       |                   |       |                                      |      |     |
| <b>A. Alternative Scenarios</b>                                                                                      |        |      |      |      |       |      |      |       |      |      |                                               |      |                            |       |                   |       |                                      |      |     |
| A1. Key variables are at their historical averages in 2004-08 7/                                                     |        |      |      |      |       |      |      |       |      |      | 4.9                                           | -0.1 | -6.6                       | -12.6 | -19.2             | -23.6 |                                      | 0.5  |     |
| A2. Primary balance under no policy change in 2004-08                                                                |        |      |      |      |       |      |      |       |      |      | 4.9                                           | 6.1  | 5.9                        | 5.8   | 3.8               | 3.2   |                                      | -0.1 |     |
| A3. Country-specific shock in 2004, with reduction in GDP growth (relative to baseline) of one standard deviation 8/ |        |      |      |      |       |      |      |       |      |      | 4.9                                           | 6.3  | 6.1                        | 6.0   | 3.9               | 3.3   |                                      | -0.1 |     |
| <b>B. Bound Tests</b>                                                                                                |        |      |      |      |       |      |      |       |      |      |                                               |      |                            |       |                   |       |                                      |      |     |
| B1. Real interest rate is at historical average plus two standard deviations in 2004 and 2005                        |        |      |      |      |       |      |      |       |      |      | 4.9                                           | 6.2  | 6.2                        | 6.2   | 4.1               | 3.5   |                                      | -0.1 |     |
| B2. Real GDP growth is at historical average minus two standard deviations in 2004 and 2005                          |        |      |      |      |       |      |      |       |      |      | 4.9                                           | 7.6  | 10.9                       | 14.1  | 15.0              | 17.4  |                                      | -0.3 |     |
| B3. Primary balance is at historical average minus two standard deviations in 2004 and 2005                          |        |      |      |      |       |      |      |       |      |      | 4.9                                           | 3.3  | -0.1                       | -0.1  | -2.0              | -2.5  |                                      | 0.0  |     |
| B4. Combination of 2-4 using one standard deviation shocks                                                           |        |      |      |      |       |      |      |       |      |      | 4.9                                           | 1.7  | -3.3                       | -3.3  | -5.2              | -5.6  |                                      | 0.1  |     |
| B5. One time 30 percent real depreciation in 2004 9/                                                                 |        |      |      |      |       |      |      |       |      |      | 4.9                                           | 6.2  | 6.0                        | 5.9   | 3.9               | 3.3   |                                      | -0.1 |     |
| B6. 10 percent of GDP increase in other debt-creating flows in 2004                                                  |        |      |      |      |       |      |      |       |      |      | 4.9                                           | 16.1 | 15.8                       | 15.7  | 13.4              | 12.7  |                                      | -0.2 |     |
| <b>Memorandum item:</b>                                                                                              |        |      |      |      |       |      |      |       |      |      |                                               |      |                            |       |                   |       |                                      |      |     |
| Public sector financial assets                                                                                       | ...    | ...  | 51.3 | 55.5 | 52.8  | 53.2 | 54.9 | 56.6  | 62.5 | 63.5 | 59.5                                          | 57.2 | 53.4                       | 49.9  | 47.6              | 46.0  |                                      |      |     |

1/ Indicate coverage of public sector, e.g., general government or nonfinancial public sector. Also whether net or gross debt is used.

2/ Derived as  $[(r - \pi) + \pi g] - g + \pi \times r$  times previous period debt ratio, with  $r$  = interest rate;  $\pi$  = growth rate of GDP deflator;  $g$  = real GDP growth rate;  $\pi$  = share of foreign-currency denominated debt; and  $\pi$  = nominal exchange rate depreciation (measured by increase in local currency value of U.S. dollar).

3/ The real interest rate contribution is derived from the denominator in footnote 2/ as  $r - \pi(1+g)$  and the real growth contribution as  $-g$ .

4/ The exchange rate contribution is derived from the numerator in footnote 2/ as  $\pi \times (1+r)$ .

5/ Defined as public sector deficit, plus amortization of medium and long-term public sector debt, plus short-term debt at end of previous period.

6/ Derived as nominal interest expenditure divided by previous period debt stock.

7/ The key variables include real GDP growth; real interest rate; and primary balance in percent of GDP.

8/ The implied change in other key variables under this scenario is discussed in the text.

9/ Real depreciation is defined as nominal appreciation (measured by percentage fall in dollar value of local currency) minus domestic inflation (based on GDP deflator).

10/ Assumes that key variables (real GDP growth, real interest rate, and primary balance) remain at the level in percent of GDP/growth rate of the last projection year.

INTERNATIONAL MONETARY FUND

LUXEMBOURG

**Staff Report for the 2004 Article IV Consultation**

**Supplementary Information**

Prepared by the European and Policy Development and Review Departments

Approved by Alessandro Leipold and Carlos G. Muñiz

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1. This supplement reports on data on the fiscal outcome for 2003 that has become available since the issuance of the staff report. Other economic indicators continued to evolve broadly in line with staff projections. The new information does not change the thrust of the staff appraisal.

**Fiscal developments and outlook**

2. According to data submitted by the authorities to Eurostat, the general government deficit was contained to 0.1 percent of GDP in 2003, about 0.8 percentage point of GDP lower than the staff's projection and 0.5 percentage point below the earlier official estimate (Table). However, as elaborated below, much of the overperformance is likely to be temporary and the authorities are maintaining the 2004-06 Stability Program (SP) targets. The modest revenue overperformance in relation to the staff's projections (but not to the SP)—stemming from higher VAT and excise tax receipts—does not materially alter the staff's revenue projections for 2004-06. Expenditure, however, was appreciably lower as major investment projects were delayed, contrary to the authorities' and the staff's assumptions. At this stage, there are no plans to cancel these projects. Considering further that social spending grew faster than the staff's projection in 2003, the staff continues to believe that the SP medium-term targets remain at risk (including, possibly, a temporary breach of the Maastricht 3 percent ceiling in 2005), unless the plans for discretionary spending are scaled down or entitlement programs reformed.